IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES
(Attorney Docket No. 004770.00722)

In re U.S. Patent Application of Juho Salo, et al.	)	
Application No. 09/893,421	)	Art Unit: 2623
Filed: June 29, 2001	)	Examiner: Saltarelli
For: Improvements in and Relating to a Broadcast Network	)	Confirmation No. 5222

BRIEF ON APPEAL

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P.O. Box 1450
Alexandria, VA 22313-1450

This is an appeal brief in accordance with 37 CFR §1.192 filed in support of Applicant's October 27, 2008 Notice of Appeal. Appeal is taken from the Final Office Action dated July 25, 2008. Accordingly, Applicant is requesting a one-month extension of time and the Commissioner is hereby authorized to the necessary fee to Deposit Account 19-0733. Should any additional fees be due, the Commissioner is authorized to charge such fees, or credit any overpayment of fees, to Deposit Account No. 19-0733.

I. REAL PARTY IN INTEREST

The owner of this application, and the real party in interest, is Nokia Corporation.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS

Claims 45-63, 65-89 and 101 remain in the application. Claims 1-44, 64 and 90-100 were previously cancelled. All pending claims (45-63, 65-89 and 101) stand rejected. Applicant is appealing all pending claims (45-63, 65-89 and 101). All claims identified above are shown in the attached appendix.

IV. STATUS OF AMENDMENTS

There are no amendments subsequent to the Final Office Action dated July 25, 2008.

V. SUMMARY OF CLAIMED SUBJECT MATTER

In making reference herein to various portions of the specification and drawings in order to explain the claimed invention (as required by 37 CFR §41.37(c)(1)(v)), Applicant does not intend to limit the claims. All references to the specification and drawings are illustrative unless otherwise explicitly stated.

There are five (5) independent claims (claims 45, 50, 56, 59 and 101) pending in the application, all of which are rejected. Independent claim 45 is directed towards an apparatus. Specifically, claim 45 recites "a classifier connectable to a source of content and operable to place the content into at least one of a plurality of hierarchically modulated simultaneously transmitted data streams which respectively have a different priority assigned to the contents therein corresponding to a particular class of the content wherein at least one of the plurality of hierarchically modulated data streams is configured to have a maximum range greater than at least one other hierarchically modulated data stream that provides an adequate C/N ratio for reception by a terminal."

Regarding the recited classifier, Figure 1 depicts an embodiment of a classifier connected to a source of content. Specifically, "[b]efore transmission, the content received for each source 13, 15 is processed in head-end equipment 21. The content, can of course, be any form of data as text, images, audio, for example." (Substitute Specification, page 5, paragraph 19, lines 1-3, emphasis added). As shown in Figure 3, the exemplary head-end equipment comprises a DC (classifier 35) and a splitter 22. Splitter 22 identifies the priority assigned to the contents of incoming packets and passes them to the appropriate stream (24 or 26) for transmission by the transmitter 11. (Substitute Specification, page 9, paragraph 28, lines 14-17)

The determination of priority may be done according to different protocols and procedures. In one exemplary embodiment, content "comprises textual elements and graphical elements which are identified by the classifier by reference to their file extensions." (Sub. Spec., Paragraph 26, 14-17).

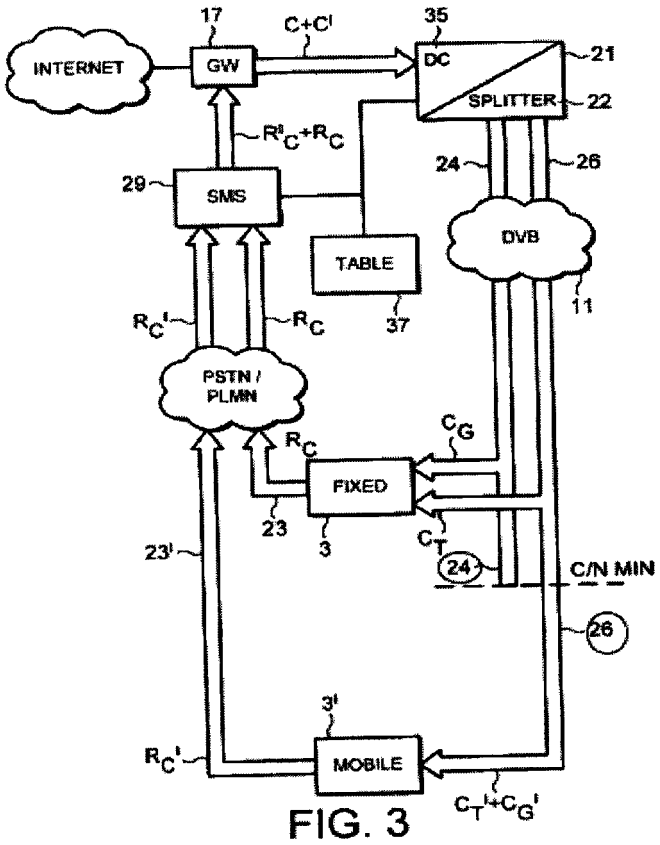


FIG. 3

Exemplary embodiments having "hierarchically modulated data streams," are also provided in Fig. 3, where hierarchically modulated simultaneously transmitted data streams (24 and 26) are shown. In the illustrated example, 26 may be a high priority stream and 24 may be a low priority stream, each being simultaneously transmitted.

Further, Figure 2 more readily illustrates one embodiment of hierarchical modulation that may be utilized in achieving the simultaneous transmission, for example, in the DVB-T standard. As described in the Substitute Specification, a MPEG-2 bit stream can be split into two parts, such as a high priority (HP) stream and a low priority (LP) stream, "both of which are transmitted simultaneously." (*See* paragraph 0022 of Sub. Spec.).

As shown below, a bit sequence of the data which modulates the HP stream is used to select quadrant 31 of the constellation diagram shown in Figure 2, whereas the bit sequence of the data which modulates the LP stream only selects a particular constellation point 33. By utilizing this modulation scheme, different data streams can be sent simultaneously without multiplexing.

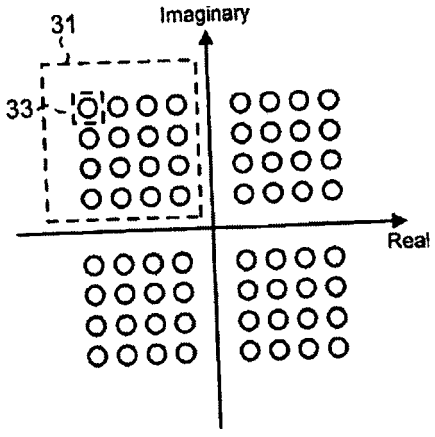


FIG. 2

Lastly, the claim recites that "at least one of the plurality of hierarchically modulated data streams is configured to have a maximum range greater than at least one other hierarchically modulated data stream that provides an adequate C/N ratio for reception by a terminal." As shown in Figure 3, "the chain line marked C/N_{min} represents the maximum range from the transmitter 11 at which C/N ratio allow satisfactory reception of the LP stream." (Substitute Specification, page 7, paragraph 25, lines 2-4). Conversely, "[t]he mobile terminal 3', which in this example, is traveling relatively far from the transmitter, receives the transmission....However, because the relatively poor C/N ratio, the receiver is capable of decoding the HP stream 26 only. (Substitute specification, page 8, paragraph 27, lines 1, 2 and 4-5). Thus depending on the "prevailing C/N ratio, [a receiver] is then able to receive either the HP stream alone or the HP and LP stream." (Substitute Specification, page 7, paragraph 25, lines 1-2).

Independent claim 50 is directed towards a method. The first element is "classifying content received for transmission in a hierarchical network." As shown in Figure 3, an exemplary head-end equipment may comprises a DC (classifier 35) and a splitter 22. Splitter 22 identifies the priority assigned to the contents of incoming packets and passes them to the appropriate stream (24 or 26) for transmission by the transmitter 11. (Substitute Specification, page 9, paragraph 28, lines 14-17)

The second element is "placing the content into at least one of a plurality of hierarchically modulated simultaneously transmitted data streams which respectively have a different priority assigned to the content corresponding to the classification of the content wherein at least one of the plurality of hierarchically modulated data streams is configured to have a maximum range greater than at least one other hierarchically modulated data stream that provides an adequate C/N ratio for reception by a terminal." Embodiments having "hierarchically modulated data streams," are also provided in Fig. 3, where hierarchically modulated simultaneously transmitted data streams (24 and 26) are shown. In the illustrated example, 26 may be a high priority stream and 24 may be a low priority stream, each being simultaneously transmitted. Regarding the simultaneous transmission, Figure 2 illustrates one embodiment of hierarchical modulation that may be utilized in achieving the simultaneous transmission, for example, in the DVB-T standard. As described in the Substitute Specification, a MPEG-2 bit stream can be split into two parts, such as a high priority (HP) stream and a low

priority (LP) stream, "both of which are transmitted simultaneously." (*See* paragraph 0022 of Sub. Spec.). A bit sequence of the data which modulates the HP stream is used to select quadrant 31 of the constellation diagram shown in Figure 2, whereas the bit sequence of the data which modulates the LP stream only selects a particular constellation point 33. By utilizing this modulation scheme, different data streams can be sent simultaneously without multiplexing.

Fig. 3 shows an exemplar embodiment in which "at least one of the plurality of hierarchically modulated data streams is configured to have a maximum range greater than at least one other hierarchically modulated data stream that provides an adequate C/N ratio for reception by a terminal." As shown in Figure 3, "the chain line marked C/N_{min} represents the maximum range from the transmitter 11 at which C/N ratio allow satisfactory reception of the LP stream." (Substitute Specification, page 7, paragraph 25, lines 2-4). Conversely, "[t]he mobile terminal 3', which in this example, is traveling relatively far from the transmitter, receives the transmission....However, because the relatively poor C/N ratio, the receiver is capable of decoding the HP stream 26 only. (Substitute specification, page 8, paragraph 27, lines 1, 2 and 4-5). Thus depending on the "prevailing C/N ratio, [a receiver] is then able to receive either the HP stream alone or the HP and LP stream." (Substitute Specification, page 7, paragraph 25, lines 1-2).

Independent claim 56 is directed towards a system. The first element is "a source of content deliverable, to a network having head end equipment operable to place content into at least one of a plurality of selected hierarchically modulated data streams for simultaneous transmission which respectively each data stream has a different priority assigned to the content therein wherein at least one of the plurality of hierarchically modulated data streams is configured to have a maximum range greater than at least one other hierarchically modulated data stream that provides an adequate C/N ratio for reception by a terminal."

Regarding the recited head end equipment, one illustrative embodiment described in the application states that "[b]efore transmission, the content received for each source 13, 15 is processed in head-end equipment 21. The content, can of course, be any form of data as text, images, audio, for example." (Substitute Specification, page 5, paragraph 19, lines 1-3, emphasis added). As shown in Figure 3 (reproduced above), the exemplary head-end equipment comprises a DC (classifier 35) and a splitter 22. Splitter 22 identifies the priority assigned to the contents of incoming packets and passes them to the appropriate stream (24 or 26) for transmission by the

transmitter 11. (Substitute Specification, page 9, paragraph 28, lines 14-17) As described above, exemplary embodiments having "hierarchically modulated data streams," are also provided in Fig. 3, where hierarchically modulated simultaneously transmitted data streams (24 and 26) are shown. In the illustrated example, 26 may be a high priority stream and 24 may be a low priority stream, each being simultaneously transmitted.

Further, Figure 2 more readily illustrates one embodiment of hierarchical modulation that may be utilized in achieving the simultaneous transmission, for example, in the DVB-T standard. As described in the Substitute Specification, a MPEG-2 bit stream can be split into two parts, such as a high priority (HP) stream and a low priority (LP) stream, "both of which are transmitted simultaneously." (*See* paragraph 0022 of Sub. Spec.). A bit sequence of the data which modulates the HP stream is used to select quadrant 31 of the constellation diagram shown in Figure 2, whereas the bit sequence of the data which modulates the LP stream only selects a particular constellation point 33. By utilizing this modulation scheme, different data streams can be sent simultaneously without multiplexing.

One embodiment also describes that "at least one of the plurality of hierarchically modulated data streams [may be] configured to have a maximum range greater than at least one other hierarchically modulated data stream that provides an adequate C/N ratio for reception by a terminal." As shown in Figure 3, "the chain line marked C/N_{min} represents the maximum range from the transmitter 11 at which C/N ratio allow satisfactory reception of the LP stream." (Substitute Specification, page 7, paragraph 25, lines 2-4). Conversely, "[t]he mobile terminal 3', which in this example, is traveling relatively far from the transmitter, receives the transmission....However, because the relatively poor C/N ratio, the receiver is capable of decoding the HP stream 26 only. (Substitute specification, page 8, paragraph 27, lines 1, 2 and 4-5). Thus depending on the "prevailing C/N ratio, [a receiver] is then able to receive either the HP stream alone or the HP and LP stream." (Substitute Specification, page 7, paragraph 25, lines 1-2).

The second element is "a terminal operable to receive the data stream from the head-end equipment." An exemplary terminal is shown in Figure 3, for example, mobile terminal 3'. As shown in Figure 3, "the chain line marked C/N_{min} represents the maximum range from the transmitter 11 at which C/N ratio allow satisfactory reception of the LP stream." (Substitute Specification, page 7, paragraph 25, lines 2-4). Conversely, "[t]he mobile terminal 3', which in

this example, is traveling relatively far from the transmitter, receives the transmission....However, because the relatively poor C/N ratio, the receiver is capable of decoding the HP stream 26 only. (Substitute specification, page 8, paragraph 27, lines 1, 2 and 4-5). Thus depending on the "prevailing C/N ratio, [a receiver] is then able to receive either the HP stream alone or the HP and LP stream." (Substitute Specification, page 7, paragraph 25, lines 1-2).

Independent claim 59 is directed towards a method and has six elements. The first element is "receiving a request for content." As provided in the application, "[i]t will be recognized that the selection of content for delivery to a user may result from a push, that is at the request of a party other than the recipient of the content. The push originator might be an advertiser or other service provider for example. Otherwise, the content may be delivered to the recipient at his or her own request." (Sub. Spec., pages 2-3, paragraph 8, lines 6-10, see also paragraph 21, line 1-2).

The second element is "passing said request to a network gateway". In one embodiment, "[t]he subscriber management system 29 has connections to both the gateways 17,19 and the transmitter head-end equipment 21. It is thus possible for the user to issue requests for specific content via the user interface 9 of the terminal 3. The request is received by the SMS 29 which obtains the content from the relevant gateway 17,19 and passes it to the transmitter head-end for placing into data containers for onward transmission." (Sub. Spec., paragraph 21, lines 8-12).

The third and fourth elements are "subsequently receiving content identified in the request in a form of at least one content element" and "classifying the at least one content element."

Figure 1 depicts an embodiment of a classifier connected to a source of content. Specifically, "[b]efore transmission, the content received for each source 13, 15 is processed in head-end equipment 21. The content, can of course, be any form of data as text, images, audio, for example." (Substitute Specification, page 5, paragraph 19, lines 1-3, emphasis added). As shown in Figure 3 (reproduced above), the exemplary head-end equipment comprises a DC (classifier 35) and a splitter 22. Splitter 22 identifies the priority assigned to the contents of incoming packets and passes them to the appropriate stream (24 or 26) for transmission by the transmitter 11. (Substitute Specification, page 9, paragraph 28, lines 14-17)

The fifth and sixth elements are "assigning a priority to the at least one content element in accordance with the classification" and "assigning the content element to at least one of a plurality of hierarchically modulated simultaneously transmitted data streams related to the priority assigned to the content wherein at least one of the plurality of hierarchically modulated data streams is configured to have a maximum range greater than at least one other hierarchically modulated data stream that provides an adequate C/N ratio for reception by a terminal."

Figure 2 illustrates one embodiment, for example, in the DVB-T standard. As described in the Substitute Specification, a MPEG-2 bit stream can be split into two parts, such as a high priority (HP) stream and a low priority (LP) stream, "both of which are transmitted simultaneously." (*See* paragraph 0022). A bit sequence of the data which modulates the HP stream is used to select quadrant 31 of the constellation diagram shown in Figure 2, whereas the bit sequence of the data which modulates the LP stream only selects a particular constellation point 33. By utilizing this modulation scheme, different data streams can be sent simultaneously without multiplexing.

As shown in Figure 3, "the chain line marked C/N_{min} represents the maximum range from the transmitter 11 at which C/N ratio allow satisfactory reception of the LP stream." (Substitute Specification, page 7, paragraph 25, lines 2-4). Conversely, "[t]he mobile terminal 3', which in this example, is traveling relatively far from the transmitter, receives the transmission....However, because the relatively poor C/N ratio, the receiver is capable of decoding the HP stream 26 only. (Substitute specification, page 8, paragraph 27, lines 1, 2 and 4-5). Thus depending on the "prevailing C/N ratio, [a receiver] is then able to receive either the HP stream alone or the HP and LP stream." (Substitute Specification, page 7, paragraph 25, lines 1-2).

Independent claim 101 is directed towards a wireless apparatus. The wireless apparatus comprises "a receiver configured to receive a plurality of hierarchically modulated simultaneously transmitted data streams which respectively have a different priority assigned to the contents therein corresponding to a particular class of the content wherein the terminal is configured to simultaneously receive the contents of any of the data streams having adequate C/N ratio at the location of the terminal."

As shown in Figure 3, "the chain line marked C/N_{min} represents the maximum range from the transmitter 11 at which C/N ratio allow satisfactory reception of the LP stream." (Substitute

Specification, page 7, paragraph 25, lines 2-4). Conversely, "[t]he mobile terminal 3', which in this example, is traveling relatively far from the transmitter, receives the transmission....However, because the relatively poor C/N ratio, the receiver is capable of decoding the HP stream 26 only. (Substitute specification, page 8, paragraph 27, lines 1, 2 and 4-5). Thus depending on the "prevailing C/N ratio, [a receiver] is then able to receive either the HP stream alone or the HP and LP stream." (Substitute Specification, page 7, paragraph 25, lines 1-2).

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- Claims 45-63, 65-89 and 101 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Gotwald (US 5,987,518) in view of Banker et al. (US 5,497,187) and Nicolas et al. (US 5,453,797).

ARGUMENT

I. Introduction

Neither Nicolas nor Banker, whether individually or in combination with any other reference of record, teach, suggest, or disclose at least "a plurality of *hierarchically modulated simultaneously transmitted data streams* which respectively have a different priority assigned to the contents therein corresponding to a particular class of the content wherein at least one of the plurality of hierarchically modulated data streams *is configured to have a maximum range greater than at least one other hierarchically modulated data stream* that provides an adequate C/N ratio for reception by a terminal."

In regards to Nicolas, Applicants respectfully submit that the Examiner is erroneously equating the terms "power" and "power range." Furthermore, any difference in the spectral densities among the two streams disclosed in Nicolas are utilized to reduce interference with NTSC bands when both streams, each having "***part of the signal***" that makes up the HDTV signal are received at the same NTSC receiver. Thus, there can be no teaching of a data stream that "is configured to have a maximum range greater than at least one other hierarchically modulated data stream."

In regards to Banker, the Examiner attempts to equate the plurality of individual data streams, each coming from a different modulator (and are not hierarchically modulated) before entering the combiner as being the streams that exit the combiner. As clearly taught in Banker, the "[d]ifferent groups of data are transmitted on a serial data channel" from the combiner to a receiver. Thus, there is no teaching of simultaneous transmission as required by the rejected claims. In this regard, because the serial data channel of Banker transmits each stream to the same end location, there can be no teaching of a data stream that "is configured to have a maximum range greater than at least one other hierarchically modulated data stream," which is also not taught by Nicolas, Gotwald, or any other art of record. In this regard, Applicants also address the combination of Banker and Nicolas with Gotwald.

A. The Nicolas Document

1. Independent claims 45, 50, 56 and 59

The Examiner asserts that Nicolas teaches the "place[ment of] differently prioritized data streams on different portions of the frequency spectrum, granting higher priority data a lower C/N ratio such that the higher priority data has a higher maximum range than lower priority data." (Office Action dated July 25, 2008, page 4). Applicants respectfully disagree. Specifically, Applicants cannot find any teaching or suggestion within Nicolas that discloses a hierarchically modulated data stream that "is configured to have a maximum range greater than at least one other hierarchically modulated data stream" as recited in independent claims 45, 50, 56 and 59. (Independent claim 101 is discussed in section A.2 below).

Nicolas discloses the "remov[al of] an interfering signal from a digitally-modulated signal." (Nicolas, Col. 5, ll. 40-42). The removal of the interfering signal is performed because, according to Nicolas, "the most dominant restriction to HDTV system performance is ***co-channel interference*** between HDTV signals and existing NTSC signals." (Nicolas, Col. 6, ll. 62-64, emphasis added). When discussing the industry's past attempts to reduce or eliminate co-channel interference, Nicolas provides an overview of "conventional ways to deal with co-channel interference." (Nicolas, Col. 2, ll. 40-41). In the method, which was cited by the Examiner:

> The streams are separated and arranged so ***that part of the signal*** is transmitted in a band below the NTSC career [*sic*] frequency and ***pan*** [*sic*] ***of the signal*** is transmitted in a band located above the NTSC carrier frequency. A null occurs at the NTSC carrier frequency; consequently, no signal power is transmitted near this frequency. The power spectral density of the lower frequency band or the 'high priority career' [*sic*] is higher by 5 dB compared to the higher frequency band or "standard priority career [*sic*]". This power difference ensures ***that the carrier-to-noise threshold of the high-priority channel is 5 dB lower than the career-to-noise [sic] threshold of the standard priority channel.***

(Nicolas, Col. 4, ll. 45-56, emphasis added).

Applicants respectfully submit that the above-cited discussion does not teach, disclose, or suggest a "hierarchically modulated" data stream. Even if the Examiner is correct, which the Applicants do not believe, that the data streams in Nicolas are transmitted at different frequencies of the spectrum in a **hierarchical** manner, Nicolas does not disclose a hierarchical modulation scheme. For example, the examiner alleges that "Nicolas teaches it was quite well known in the art at the time to place differently prioritized data streams on different portions of the frequency spectrum," (See Office Action dated July 25, 2008, page 4). Hierarchical modulation, however,

does not put data streams on different portions of the frequency spectrum, but rather modulates them in a data symbol stream transmitted on one channel.

In this regard, Applicants, respectfully submit that the above-cited discussion does not teach, disclose or suggest a hierarchically modulated data stream "configured to have a maximum range greater than at least one other hierarchically modulated data stream" as recited in independent claims 45, 50, 56 and 59. Rather, the difference in the spectral densities among the two streams disclosed in Nicolas are utilized to reduce interference with NTSC bands when both streams, each having "***part of the signal***" that makes up the HDTV signal are received at the same NTSC receiver. In fact, as discussed just below the cited text, Nicolas expressly states that:

> [T]his latter design relies on the fact that the high priority channel occupies a band which is normally strongly attenuated by the Nyquist filters of NTSC receivers, and ***the idea is that this high power digital signal will cause very little interference to NTSC receivers***, while at the same time avoiding the NTSC video carrier frequency that is the frequency component most detrimental to **the HDTV signal**.

(Nicolas, Col. 4, l. 62 - Col. 5, l. 2, emphasis added). Nothing within Nicolas contradicts any indication that both streams must be received the HDTV signal, thus one stream would not be "configured to have a maximum range greater than at least one other hierarchically modulated data stream." Furthermore, the "timing recovery is derived from the high priority channel." (see Nicolas, Col. 5, ll. 13-14), and as such, the reception of the low priority channel would be completely useless without receiving the high priority channel. Therefore, the disclosure cited in Nicolas would not motivate a person of skill in the art to adjust the streams such that to produce a data stream having a "maximum range greater than at least one other hierarchically modulated data stream." Applicants are not disclaiming that (at least in certain embodiments), information from two or more simultaneously transmitted streams may be received and utilized by a single terminal. Indeed, in certain embodiments, the reception of one stream may complement the reception of another stream. In contrast to the teachings of Nicolas, however, the reception of one stream would not be entirely useless without the reception of a second stream (albeit some services may not be available). In contrast to the claims on appeal, the teachings of Nicolas, when reviewed as a whole, mandate that both streams must be received because a stream is entirely useless without the other. Therefore, Nicolas teaches against having a stream that is

"configured to have a maximum range greater than at least one other hierarchically modulated data stream" as recited in the claims.

The Examiner alleges that Column 4 of Nicolas teaches that "the higher priority data has a higher maximum range than lower priority data." (See Office Action dated July 25, 2008, page 4). Applicants respectfully submit that the Examiner is erroneously equating the concepts of "power" and "power range." Specifically, in the subsequent Advisory Action, the Examiner argues that because Nicolas teaches that the "high priority data represents one fifth of the total power," this "is a demonstration that the described modulation scheme is very similar, if not the same, as applicant's claimed modulation scheme." (Advisory Action dated September 19, 2008, continuation sheet, 4th paragraph). Applicants disagree with this statement for several reasons. First, the statement that one stream may have higher power than another stream indicates nothing about the range of the two streams. Specifically, "power" does not always equate to "power range." Rather, one skilled in the art first needs to know the amount of data (i.e., the quantity of bits) being transferred. In fact, if one stream has 10 times the power as a second stream, however, has 100 times for bits being transmitted, the effective maximum range of the higher powered stream may be less. Nicolas never discusses the number of bits transmitted in each stream. In fact, Nicolas teaches away from having one stream with a further maximum range. Indeed, upon review of Nicolas, one skilled in the art would be motivated to keep the maximum range of the two streams about the same distance because both streams are required for the signals to be useful. Specifically, the streams each form part of the HDTV signal and only one of the streams comprises the required information needed for timing recovery. Thus, there is no teaching or suggestion of at least one of the "data streams [being] configured to have a maximum range greater than at least one other hierarchically modulated data stream that provides an adequate C/N ratio for reception by a terminal."

Figure 2 of the instant application (shown below) more readily illustrates one embodiment of hierarchical modulation that may be utilized in achieving the simultaneous transmission, for example, in the DVB-T standard. As described in the Substitute Specification, a MPEG-2 bit stream can be split into two parts, such as a high priority (HP) stream and a low priority (LP) stream, "both of which are transmitted simultaneously." (See paragraph 0022 of Sub. Spec.).

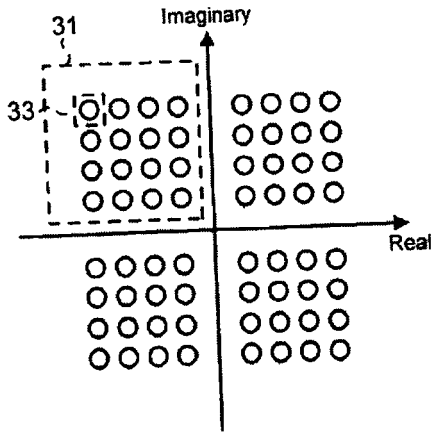


FIG. 2

As shown in Figure 2, a bit sequence of the data which modulates the HP stream is used to select quadrant 31 of the constellation diagram shown in Figure 2, whereas the bit sequence of the data which modulates the LP stream only selects a particular constellation point 33. The result is that the HP stream is more robust as a receiver can more easily identify a quadrant over a particular constellation point. However, the bit rate of the HP stream will be less than that of the LP stream. Thus the LP stream can be utilized by the receiver where the C/N ratio is such as to allow the receiver to detect not only the quadrant but also a particular constellation point. (Paragraph 22 of Sub. Spec.). Such aspects are not taught, disclosed, or suggested by Banker or any other art of record.

For at least these reasons, Applicants respectfully submit that Nicolas does not teach, disclose, or suggest a "hierarchically modulated" data stream "configured to have a maximum range greater than at least one other hierarchically modulated data stream" as recited in independent claims 45, 50, 56 and 59, and therefore, respectfully request the withdrawal of independent claims 45, 50, 56, and 59 and claims depending therefrom.

2. Independent claim 101

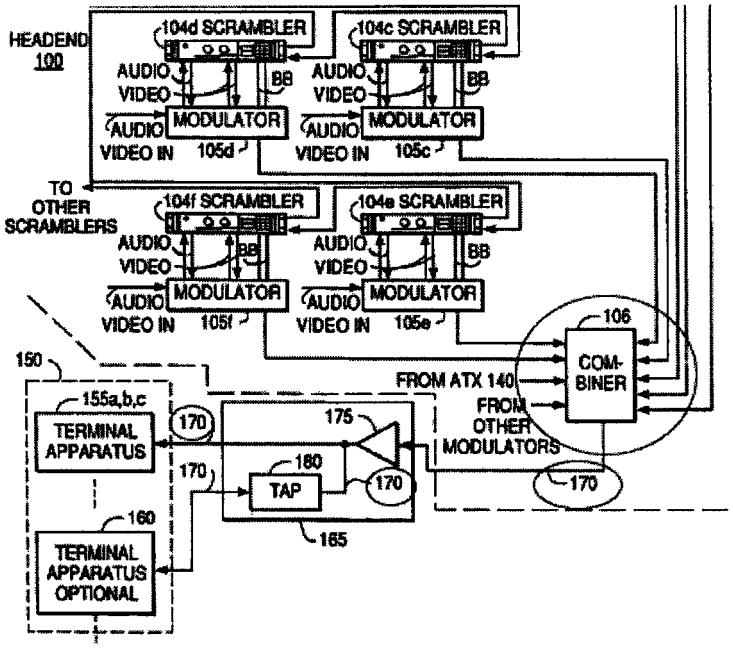
In regards to independent claim 101, Applicants cannot locate any discussion within the Office Action explaining how the teachings of Nicolas apply to the recited subject matter of claim 101. In addition to the arguments above, Applicants respectfully submit that Nicolas does not teach a "wireless device" as recited in claim 101 nor is there any teaching, disclosure, or suggestion of "a receiver configured to receive a plurality of hierarchically modulated

simultaneously transmitted data streams which respectively have a different priority assigned to the contents therein corresponding to a particular class of the content wherein the terminal is configured to simultaneously receive the contents of any of the data streams having adequate C/N ratio at the location of the terminal." Furthermore, as explained in more detail below in Section B below, neither Banker nor Gotwald (the other two references cited in the pending §103 rejection) teach, disclose, or suggest the recited subject matter of independent claim 101. Applicants, therefore, respectfully request reconsideration and withdrawal of the rejection in regards to claim 101.

B. The Banker Document

The Examiner asserts that "Banker discloses placing differently prioritized data into different streams which are simultaneously transmitted." (Office Action dated June 25, 2008, page 3). Applicants respectfully disagree that the different streams that the streams of Banker are simultaneously transmitted as recited in each of the independent claims. Applicants further respectfully disagree that the data streams of Banker are hierarchically modulated.

Nowhere in Banker is the combiner 106 disclosed or suggested to transmit simultaneously transmitted data streams. Rather, as explicitly admitted by the Examiner, "[t]he output from the scramblers and data inserters are all transmitted to the combiner 106, which **combines** all the different frequency bands into **one** frequency multiplexed broadcast for delivery to the receivers, **as is conventional**." (Advisory Action dated September 19, 2008, continuation sheet, paragraph 8, emphasis added).



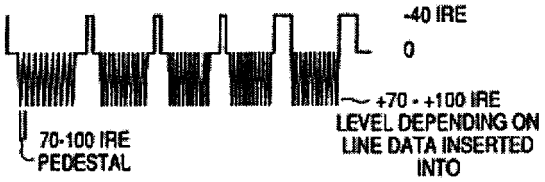
As explained in more detail to the left, the Examiner's statement reflects that the "streams" taught by Banker are merely conventionally transmitted in sequential order through a cable. An annotated portion of Banker's Figure 1 is shown below to the left. As admitted by the Examiner, each of the streams are combined, regardless whether originating from headend 100 or any specific distribution apparatus 165, and connects, for example, signal combiner 106 to apparatus 175 and apparatus 175 to terminal apparatus 155a,b,c or tap 180."

Furthermore, Banker also states that the transmission to the terminal apparatus 150 is performed on a serial data channel. In fact, Banker explicitly states "[d]ifferent groups of data are transmitted on a **serial** data channel...." (Col. 10, ll. 37-38; emphasis added). As shown below, Figure 5a (as well as Figs 5b and 5c) of Banker, shows the serial arrangement.

FIG. 5(a)

FIG. 5(b)

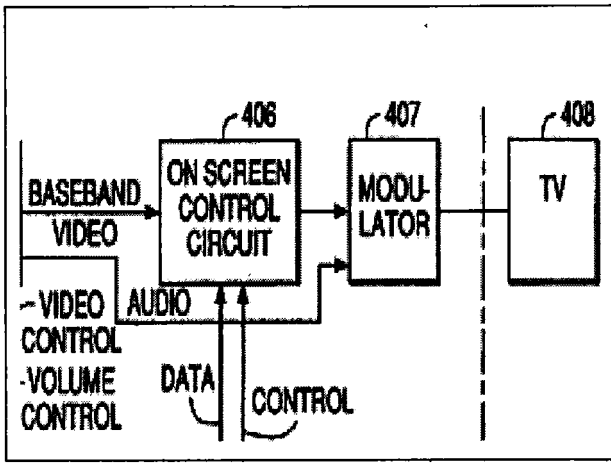
FIG. 5(c)



As seen in Figs. 5a-5c, a chronology of the changes performed on the transmitted content clearly demonstrates that the serial arrangement is preserved. Indeed, any "streams" of Banker are merely transmitted in the serial data channel. For example, streams (7), (8), and (9) (shown in Fig. 5a) are **not** simultaneously transmitted, but instead are transmitted on recited the serial data channel). The same streams are preserved in Figure 5(b) with the removal of only select

equalizing pulses at select lines. This is more clearly explained in reference to Figure 4 of Banker.

As stated in Banker, "FIG. 4 is a block schematic diagram of in-band/out-of-band ***data terminal apparatus of FIG. 1***." (Banker, Col. 5, ll. 54-56, emphasis added). A portion of Figure 4 is shown to the left showing the terminal apparatus 150 shown in Figure 1 receives the "BASEBAND VIDEO." As discussed above, the Examiner asserts that Figure 5a shows the baseband video (which as explicitly stated in Banker is in a serial arrangement not the simultaneous transmissions as recited in the rejected claims). Thus, as received by the terminal that is connected to TV 408, the data is preserved in the serial arrangement, in which for example, [l]ines 7-9 of the vertical blanking interval of an NTSC standard television signal [shown in Figure 5] comprises three times 63.5 microseconds ***duration*** or approximately 190 microseconds. (Banker, Col. 24, ll. 34-37).



2. Combination with Gotwald

The Examiner alleges that "[i]t would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Gotwald to include the data streams are corresponding hierarchical modulated data streams that are simultaneously transmitted, as taught by Banker, for the benefit of separating data streams so that the lower priority date will not interfere with the transmission of higher priority data." (Office Action dated July 28, 2008, page 3, errors in original). Applicants respectfully submit that combining the references would not teach, disclose, or suggest the subject matter of the rejected claims. Each of the three data types of Gotwald are "prioritized" by three separate and distinct priority modules (*see, e.g.*, Col. 4, lines 24 – 27, 32 – 37, and 39 – 42) Therefore, the three categories are not prioritized among each other at the priority modules, but rather prioritized only within a selected protocol. The queues are then transmitted through a single broadband channel. (*see* Col. 3, lines 2 – 3, 51 – 53, and Fig. 1, item 16).

In view of the forgoing, Applicants respectfully request reversal of the rejection of independent claims 45, 50, 56, 59 and 101. For at least the same reasons, Applicants respectfully request withdrawal of the rejection of the dependent claims which depend from the independent claims.

CONCLUSION

The rejections contained in the Action of July 25, 2008 should be reversed for at least the reasons recited above. Reversal of the rejections is respectfully requested.

Respectfully submitted,

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CLAIMS APPENDIX

1-44. (Cancelled)

45. An apparatus comprising:

a classifier connectable to a source of content and operable to place the content into at least one of a plurality of hierarchically modulated simultaneously transmitted data streams which respectively have a different priority assigned to the contents therein corresponding to a particular class of the content wherein at least one of the plurality of hierarchically modulated data streams is configured to have a maximum range greater than at least one other hierarchically modulated data stream that provides an adequate C/N ratio for reception by a terminal.

46. An apparatus as claimed in claim 45, wherein a classification of content is made in accordance with a data type of the content.

47. An apparatus as claimed in claim 46, wherein the classifier is connectable to a data stream of content in the form of data elements and a splitter is connected to the output of the classifier wherein the classifier identifies the data type of each element of the data streams and inserts a marker into said data streams indicative of a priority assigned to the element such that the splitter subsequently places each data element, in accordance with the marker, into a corresponding hierarchical transport stream for subsequent transmission by a network.

48. An apparatus as claimed in claim 46, further including a connection to a look-up table accessible in use by the classifier, the table comprising a set of profiles, each profile including at

least one definition of a priority for a particular data type wherein a selection by the classifier of a particular profile for identifying the data type of each element is determined by a network.

49. A apparatus as claimed in claim 45, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

50. A method comprising:

classifying content received for transmission in a hierarchical network; and

placing the content into at least one of a plurality of hierarchically modulated simultaneously transmitted data streams which respectively have a different priority assigned to the content corresponding to the classification of the content wherein at least one of the plurality of hierarchically modulated data streams is configured to have a maximum range greater than at least one other hierarchically modulated data stream that provides an adequate C/N ratio for reception by a terminal.

51. A method as claimed in claim 50, further comprising:

defining a data stream for a particular classification.

52. A method as claimed in claim 51, further comprising:

establishing a set of profiles, each of which includes at least one definition of a data stream for a particular classification wherein a selection of a particular profile is determined by the network.

53. A method as claimed in claim 52, wherein the network determines the selection of a profile on a basis of an intended recipient of the content.

54. A method as claimed in claim 52, wherein the network determines the selection of a profile on the basis of a service providing said content.

55. A method as claimed in claim 52, wherein the network determines the selection of a profile on a basis of network load.

56. A system comprising:

a source of content deliverable, to a network having head end equipment operable to place content into at least one of a plurality of selected hierarchically modulated data streams for simultaneous transmission which respectively each data stream has a different priority assigned to the content therein wherein at least one of the plurality of hierarchically modulated data streams is configured to have a maximum range greater than at least one other hierarchically modulated data stream that provides an adequate C/N ratio for reception by a terminal; and

a terminal operable to receive the data stream from the head-end equipment.

57. A system as claimed in claim 56, wherein the terminal provides a return channel connectable, in use, to the network, such that a request for a delivery of content may be originated by the terminal.

58. A system as claimed in claim 56, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

59. A method comprising:

receiving a request for content;

passing said request to a network gateway;

subsequently receiving content identified in the request in a form of at least one content element;

classifying the at least one content element;

assigning a priority to the at least one content element in accordance with the classification; and

assigning the content element to at least one of a plurality of hierarchically modulated simultaneously transmitted data streams related to the priority assigned to the content wherein at least one of the plurality of hierarchically modulated data streams is configured to have a maximum range greater than at least one other hierarchically modulated data stream that provides an adequate C/N ratio for reception by a terminal.

60. A method as claimed in claim 59, further comprising:

identifying a user identity from the request; and

obtaining a corresponding user profile in accordance with which profile priority is assigned to the at least one content element.

61. A method as claimed in claim 59, wherein the request is received in a return channel established by a terminal of a public land mobile network via a public switched telephone network and the content element is delivered over a broadband broadcast network.

62. A method as claimed in claim 59, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

63. A computer-readable medium comprising computer-executable instructions that when executed perform the method of claim 59.

64. (Cancelled)

65. An apparatus as claimed in claim 47, further comprising:

a connection to a look-up table accessible in use by the classifier, the table comprising a set of profiles, each of which includes at least one definition of a priority for a particular data type wherein a selection by the classifier of a particular profile for identifying a data type of each element is determined by the network.

66. A method as claimed in claim 51, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

67. A method as claimed in claim 52, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

68. A method as claimed in claim 53, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

69. A method as claimed in claim 54, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

70. A method as claimed in claim 55, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

71. A method as claimed in claim 48, wherein the creation of at least one of the profiles in the set of profiles is based upon a factor selected from the group consisting of: the terminal type, the level of service, and combinations thereof.

72. A method as claimed in claim 52, wherein the establishment of at least one of the profiles in the set of profiles is based upon a factor selected from the group consisting of: the terminal type, the level of service, and combinations thereof.

73. A method as claimed in claim 60, wherein at least one of the profiles in the set of profiles is based upon a factor selected from the group consisting of: the terminal type, the level of service, and combinations thereof.

74. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 50.

75. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 51.

76. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 52.

77. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 53.

78. A system as claimed in claim 57, wherein said hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

79. A method as claimed in claim 59, wherein said request is received in a return channel established by a terminal of a public land mobile network via a public switched telephone network and the content element is delivered over a broadband broadcast network.

80. A method as claimed in claim 59, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

81. A method as claimed in claim 60, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof .

82. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 59.

83. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 60.

84. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 61.

85. A method as claimed in claim 54, wherein the network is a terrestrial digital video broadcast network (DVB-T).

86. A method as claimed in claim 62, wherein the network is a terrestrial digital video broadcast network (DVB-T).

87. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 71.

88. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 54.

89. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 55.

90. – 100. (Cancelled)

101. A wireless apparatus comprising:

a receiver configured to receive a plurality of hierarchically modulated simultaneously transmitted data streams which respectively have a different priority assigned to the contents therein corresponding to a particular class of the content wherein the terminal is configured to simultaneously receive the contents of any of the data streams having adequate C/N ratio at the location of the terminal.

VI. EVIDENCE APPENDIX

None.

VII. RELATED PROCEEDINGS APPENDIX

None.